MOUNDS BRIDGE
County Road 115 Spanning Price River, 12 miles Northeast of Elmo
Elmo vicinity
Emery County
Utah

HAER No. UT-90

HAER
UTAH
8-ELMO.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C St. NW
Washington, DC 20240

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UTAH
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HISTORIC AMERICAN ENGINEERING RECORD
MOUNDS BRIDGE

I. INTRODUCTION

Location:	Spanning the Price River on County Road 115, 12 miles northeast of Elmo, Emery County, Utah and 7 miles southeast of Wellington, Carbon County, Utah
Quad:	Olsen Reservoir, Utah 7.5 min scale
UTM:	12/532260mE 4366600mN
Date of Construction:	1914
Present Owner:	Emery County County Seat, Castle Dale, Utah
Present Use:	Vehicular and pedestrian bridge to be replaced by a new vehicular and pedestrian bridge. Projected date of removal is November 1996.
Significance:	The Mounds Bridge is a steel Warren pony truss bridge.
Historians:	Lorna Billat and Jenni Prince-Mahoney, JBR Environmental Consultants, Inc., June 1996

II. HISTORY

A. NEED FOR THE BRIDGE

Castle Valley is nestled below the Wasatch Range in east central Utah. The area was settled by Mormon pioneers in the late 1870s and in 1880 became Emery County.[1] In the 1880 census, eight types of occupations were represented in Emery County: farmers (81%), ranchers (13%), a herder, a harnessmaker, a stonemason, a carpenter, a blacksmith, and a lawyer. [2] The community was based solely on agriculture. By 1900 the occupational make-up of the community had greatly expanded with the census listing 61 types of occupations. Agriculture comprised 58% of the occupations[3] at this time.

The shift from agriculture to mining in the northern portion of Castle Valley was well on its way by 1894. The northern part of Castle Valley petitioned to split from Emery County and in 1894 became Carbon County, named for its mining future.[4] Castle Valley has the richest, most important coal fields in the state which furnish 98% of Utah's output of coal.[5]

The arable locations for crops and livestock grazing were on both sides of the Price River. It became apparent that a means of crossing the river was necessary to access the areas and to transport the crops and livestock. In 1883 the Denver and Rio Grande Western Railroad came through Emery County and access across the river was necessary to utilize the railroad system.[6] Castle Dale had hoped and expected the railroad route to pass through and stop in their town,[7] but the route was changed with the stop

being northeast of what would be the townsite of Elmo. Therefore this county road was the main thoroughfare to the Denver and Rio Grande Western Railroad for those coming from Castle Dale and the surrounding areas.

The town of Elmo is located in Castle Valley, in the northwest portion of Emery County. Elmo is an outgrowth of the town of Cleveland and began as a group of homesteads filed in 1904 by five men from Cleveland.[8] It was an ideal area since it was so close to the Denver and Rio Grande Western Railroad stop. In 1907 additional homesteads were filed in the Washboard Flat area. This would later become the location of the town of Elmo, some 12 miles northeast of the bridge. Irrigation canals were surveyed and dug. Residents lived in tents until 1909, when the first cabin was built.[9] This was the year the townsite was surveyed and laid out. Once the townsite was plotted, an additional irrigation ditch was dug to bring water into town.

Elmo's economy has always been based on farming and stock-raising. Dairy cows and range cattle have been the most profitable stock, although poultry and hogs have also done well.[10] In the first few years of settlement, the alfalfa and clover seed industry was lucrative. Farmers also kept bee colonies which proved to be profitable for several years.[11] Rural roads are an integral part of the agricultural community providing links between the farm fields, settlements, and distribution lines.

By 1911, the town of Elmo had grown in earnest, evidenced by the need for a larger building for church and social gatherings. The old Cleveland school house was bought and dragged on logs to Elmo.[12] The first store

was in the front room of Lillard Tucker's house where he sold groceries and dry goods sometimes in exchange for butter and eggs. In the early years other mercantiles were run by Thursa Olsen, William J. Atwood, Ben Hansen, and Frank K. Jones.[13] The first Post Mistress was Mrs. Thursa Olsen in 1912. Other communities in the area were also expanding. As a result of this growth and the need to access the railroad, in 1913 funds were appropriated to build a permanent bridge over the Price River near Elmo.[14] Elmo became an incorporated town in 1935.[15]

B. CONSTRUCTION CHRONOLOGY

The first road through the Elmo area was made in 1890, long before the homestead claims had been filed. This road ran diagonally through the present townsite and on to Wellington.[16] The first organized road building crew in the county was supervised by Selectman Orange Seeley, Sr.[17] In the year 1888, Emery County obtained aid from the territory and bridges were then constructed on the Cottonwood, Price, and Huntington streams.[18]

In the early years, territorial and county roads were financed through poll taxes and tolls. At the time it was instituted, poll taxes required one day of labor or $1.50 per year from all able-bodied males of a certain age. In 1862, the poll tax law in Utah was changed to two days labor per year or $1.50 per day in lieu of that.[14] Tolls were instituted to pay for maintenance on wagon roads and to keep the necessary structures over streams passable. In 1914, in Emery County, poll taxes required every man age 21 years to 50 years to pay $200.00 or they could choose to work out the tax by using their teams or equipment to improve roads.[15]

Knowlton acknowledged "this type of financing {was} very satisfactory for short sections of highway which involve primarily bridges, tunnels, or ferries".[16]

Railroad transportation was available in the area in 1883 when the Denver and Rio Grande Western Railroad was constructed through the valley. This cut down on the need for road maintenance between many towns. As a result of the increased utilization of the railroad system, the funding provided by the state for inter-community roads was greatly reduced. Therefore, rural community road maintenance became strictly a county and/or city concern[17].

The State Road Commission was created in 1909. At that time, Emery County roads were maintained mostly by the county. Only two segments of state road were present in Emery County by 1910.[18] In 1913, the Utah State Legislature appropriated funds for construction of a permanent bridge over the Price River at Mounds, a stop on the Denver and Rio Grande Western Railroad.[19] The road through Mounds was county owned, not a designated state route, which required that the County Commissioners of Emery County oversee its construction. This contradiction triggered conflict between the county and the state that would last throughout the planning and construction of the bridge.[20] The Emery County Surveyor requested a design and bid for a riveted steel truss bridge from James J. Burke, a Salt Lake engineer and contractor, in the fall of 1913. The county also solicited bids and designs from other contractors which upon review were all rejected by the Utah State Road Commission (USRC). The USRC stated that the plans and specifications were all inferior and lacking in State Road Commission standards. The road commission

refused to release the money appropriated by the legislature until the bridge design conformed to USRC specifications.[21] The dispute was finally settled after almost a year; the agreement being that the state would design the bridge and the county would pay for construction and be reimbursed by the state appropriated funds. In August 1914, a contract was awarded to James J. Burke to construct the bridge at a cost of $1,897.00. The superstructure steel was delivered via the railroad to Mounds. Residents of Emery County completed the job by constructing the abutments and approaches and erecting the truss bridge.[22]

The Mounds bridge is an early example of a Warren Pony truss with verticals having a construction date of 1914. It is one of eleven such bridges built in the 1913-14 biennium using USRC design/specification plans.[23] Several of these bridges with medium to long spans were constructed in the state in the 1910s and 1920s, but few have survived.[24]

C. LOCATION

The Mounds Bridge spans the Price River approximately 12 miles northeast of Elmo on a county road. It is in Emery County. It is seven miles southeast of Wellington, Carbon County, Utah. The bridge provides access to arable lands on both sides of the Price River and provides access to the railroad.

III. THE BRIDGE

A. DESCRIPTION

The Mounds Bridge is a single span steel Warren pony truss with verticals. It is triangular in outline with verticle braces. The diagonals carry both compressive and tensile forces. The verticals serve as bracing for the triangular web system.[25] "Warren" refers to Captain James Warren, who, along with Theobald Monzani of England patented the Warren truss design in 1846. "Warren" is the triangular configuration of the struts, while "pony" refers to the bridge having sides with no superstructure/roof. This bridge type is the most common form of truss bridge in the state.[26] It has a maximum span of 90 feet and is 16 feet wide. The bridge is rigid-connected with rivets. The trusses extend about seven feet above the wood deck which rests on the steel substructure. The deck planks are 2 inches by 10 inches. Vehicle trackways, consisting of a series of closely spaced boards lengthwise on bridge, are superimposed over the decking.[27] The bridge is equipped for single lane traffic. The deck substructure consists of a series of joined lateral steel "I" beams supported by the lower chord. The abutments are concrete cast-in-place and anchored in the river banks. Wing walls extend from the abutments for erosion control. These are also cast-in-place concrete.

B. MODIFICATIONS

The bridge deck planks have been replaced periodically which is a normal and required part of maintenance. The construction materials and techniques used in this maintenance have been consistent with the original

bridge design and workmanship. The cast-in-place concrete abutments and wingwalls have not been replaced and are original construction.

C. OWNERSHIP AND FUTURE

The Mounds Bridge was built, owned, and continues to be maintained by the County of Emery. Recent study of the bridge indicated limitations in handling projected traffic volumes and loads in the years ahead. It was deemed necessary to replace the bridge in order to handle forthcoming use.

IV. FOOTNOTES

1. Powell, Allan K., Emery County: Reflections on Its Past and Future, p. vi.
2. Powell, Allan K., Emery County: Reflections on Its Past and Future, p. 5.
3. Powell, Allan K., Emery County: Reflections on Its Past and Future, p. 5.
4. Powell, Allan K., Emery County: Reflections on Its Past and Future, p. 11.
5. McElprang, Stella, Castle Valley: A History of Emery County, p. 11.
6. Beck, Warren A. and Ynez D. Haase, Historical Atlas of the American West, p. 60.
7. McElprang, Stella, Castle Valley: A History of Emery County, p. 22.
8. McElprang, Stella, Castle Valley: A History of Emery County, p. 132.
9. McElprang, Stella, Castle Valley: A History of Emery County, p. 132.
10. McElprang, Stella, Castle Valley: A History of Emery County, p. 134.
11. McElprang, Stella, Castle Valley: A History of Emery County, p. 134.
12. McElprang, Stella, Castle Valley: A History of Emery County, p. 133.
13. McElprang, Stella, Castle Valley: A History of Emery County, p. 135.
14. State of Utah Road Commission, Third Biennial Report 1913 and 1914, p. 115.
15. McElprang, Stella, Castle Valley: A History of Emery County, p. 135.
16. McElprang, Stella, Castle Valley: A History of Emery County, p. 135.
12. McElprang, Stella, Castle Valley: A History of Emery County, p. 19.
18. McElprang, Stella, Castle Valley: A History of Emery County, p. 19.
14. Knowlton, Ezra C., History of Highway Development in Utah, p. 21.
15. Wellington Municipal Corp., Wellington ... City on the move.. p. 91.
16. Knowlton, Ezra C., History of Highway Development in Utah, p. 23.

17. Knowlton, Ezra C., History of Highway Development in Utah, p. 78.

18. Knowlton, Ezra C., History of Highway Development in Utah, p. 146-7.

19. State of Utah State Road Commission, Third Biennial Report 1913 and 1914, p. 115.

20. Fraser, Clayton, Utah Historic Bridge Inventory Data: Mounds Bridge No. 015021C.

21. Fraser, Clayton, Utah Historic Bridge Inventory Data: Mounds Bridge No. 015021C.

22. Fraser, Clayton, Utah Historic Bridge Inventory Data: Mounds Bridge No. 015021C.

23. Montgomery, Jacki, Cultural Resource Inventory of the Lower San Rafael Bridge and the Price River (Mounds) Bridge Projects, p. 30.

24. Fraser, Clayton, Utah Historic Bridge Inventory Data: Mounds Bridge No. 015021C.

25. History News, Comp, T. Allan and Donald Jackson, Bridge Truss Types: A Guide to Dating and Identifying, p. 7.

26. Montgomery, Jacki, Cultural Resource Inventory of the Lower San Rafael Bridge and the Price River (Mounds) Bridge Projects, p. 29.

27. Montgomery, Jacki, Cultural Resource Inventory of the Lower San Rafael Bridge and the Price River (Mounds) Bridge Projects, p. 29.

V. BIBLIOGRAPHY

A. BOOKS

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B. PERIODICALS

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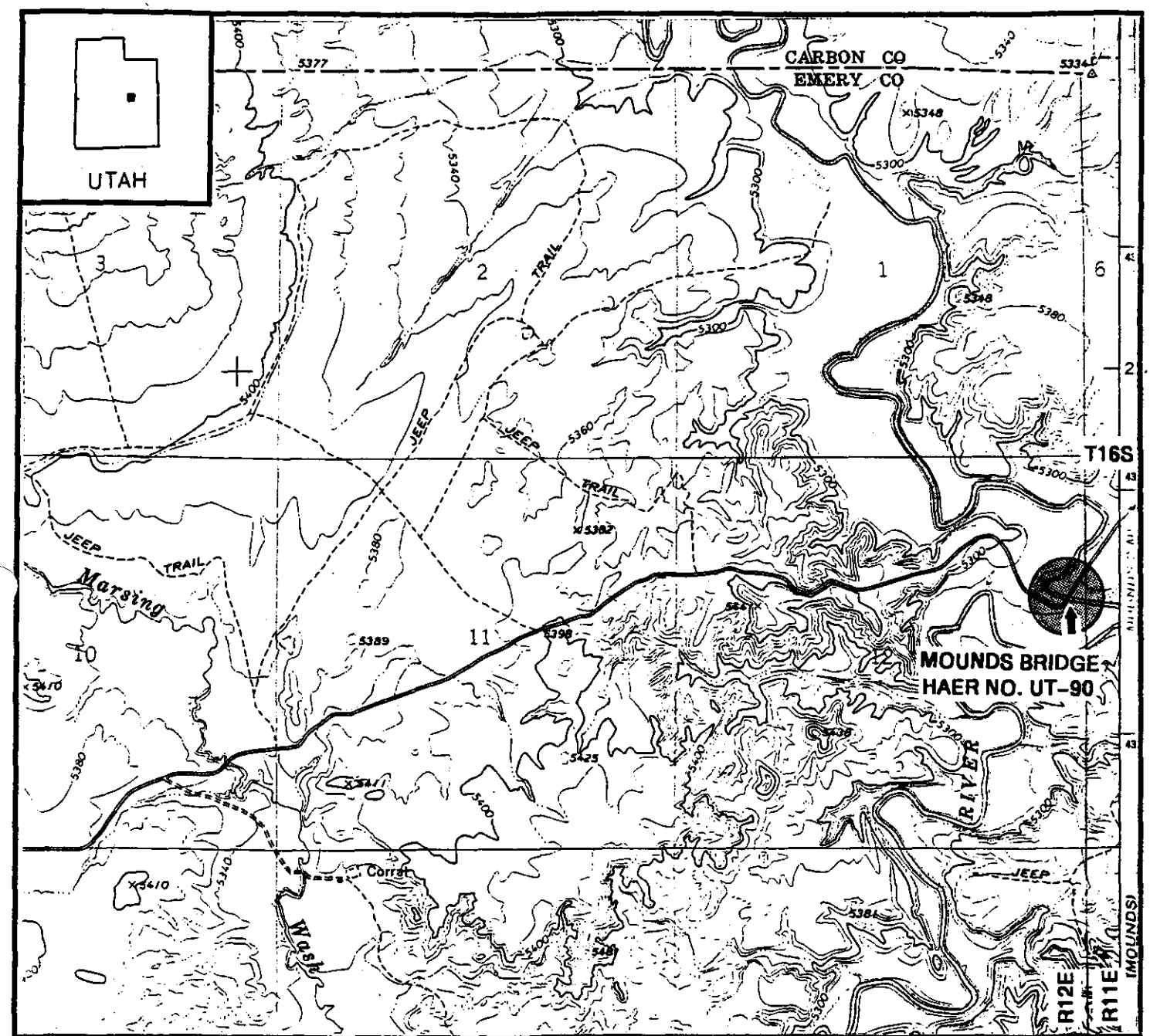

KEY:

2000 1000 0 2000 FEET
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MOUNDS BRIDGE
SPANNING PRICE RIVER
NEAR WELLINGTON, UTAH

FIGURE 1

BRIDGE LOCATION

jbr environmental consultants, inc.
Salt Lake City, Utah Cedar City, Utah Reno, Nevada Elko, Nevada